

## CLAIMS

1. A flip-flop diagonal with variable viewing angles, comprises a housing body, an eyepiece adapter unit and a reflective mirror unit, characterized in that,

the housing body has a cylindrical sleeve for mounting the diagonal to a telescope;

the eyepiece adapter unit includes an eyepiece adapter and an eyepiece support frame, the eyepiece adapter is fixed on the eyepiece support frame, the eyepiece support frame is pivotably mounted on the housing body;

the reflective mirror unit includes a reflective mirror, a mirror support bracket and rotary shafts, the reflective mirror is mounted in the mirror support bracket, and the mirror support bracket is pivotally mounted on the eyepiece support frame through the rotary shafts.

2. The flip-flop diagonal according to Claim 1, wherein it further includes a spring for elastically connecting the eyepiece support frame to the mirror support bracket.

3. The flip-flop diagonal according to Claim 1, wherein the housing body includes a seat body, an upper cover plate and a side cover plate, the seat body is connected to the side cover plate, and the upper cover plate is connected to the eyepiece support frame.

4. The flip-flop diagonal according to Claim 1, wherein it further comprises a transmission and limiting fixture including a first arc groove provided on the side wall of the housing body, a second arc groove provided on the eyepiece support frame, and a restricting shaft provided on the mirror support bracket.

5. The flip-flop diagonal according to Claim 1, wherein it further comprises another transmission and limiting fixture including a notch on the housing body and the eyepiece support frame.

6. The flip-flop diagonal according to Claim 1, wherein it further comprises an anchoring fixture, the anchoring fixture is provided between the eyepiece support frame and the housing body, and includes a steel ball and an anchoring hole.

7. The flip-flop diagonal according to Claim 1, wherein it further comprises a locking fixture including a hand knob, which is screwed to the rotary shaft.

8. The flip-flop diagonal according to Claim 1, wherein the rotary shaft is located on the reflecting surface of the reflective mirror and intersects the axis of the telescope and the eyepiece.

9. The flip-flop diagonal according to Claim 1, wherein the mirror support bracket and the eyepiece support frame rotate coaxially, the rotation angle of the mirror support bracket is one half of that of the eyepiece support frame.

10. The flip-flop diagonal according to any of the preceding claims, wherein the eyepiece adapter unit can be pivoted to the angle of  $45^{\circ}$  or  $90^{\circ}$  with respect to the axis of the telescope.